NavMed 369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN

Vol. 20 Friday, 8 August 1952 No. 2

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Administration of Chloramphenicol

The following articles have very recently appeared in medical literature reporting bone marrow depression, aplastic anemia, and fatalities from the administration of chloramphenicol: "Aplastic Anemia Following Prolonged Administration of Chloramphenicol," J.A.M.A. Vol. 149, No. 3, 17 May 1952—Wilson, Harris, Henstell, Witherbee, and Kahn; "Fatal Aplastic Anemia Associated With Chloramphenicol Therapy," J.A.M.A. Vol. 149, No. 10, 5 July 1952, Clandon and Holbrook; "Fatal Aplastic Anemia Following Chloramphenicol Administration," J.A.M.A. Vol. 149, No. 10, 5 July 1952, Smiley, Cartwright, and Wintrobe; "Fatal Aplastic Anemia in Children Following Chloramphenicol Therapy," J.A.M.A. Vol. 149, No. 10, 5 July 1952, Sturgeon.

In several instances where the drug was given over prolonged periods of time fatalities resulted. In other instances granulocytopenia, neutropenia, and epistaxis were observed where the drug was given for shorter periods of time. Prompt recovery was the rule in the latter cases upon discontinuance of the drug and institution of supportive therapy. The element of individual susceptibility, length of treatment, and total dosage are all factors to be seriously considered as causes for these reactions. The drug has been used in many thousands of cases without ill effect, however, serious blood dyscrasias as those described in these recent reports must be considered as a grave warning. A history of allergic manifestations may be a predisposing factor.

The abstracted opinions of the various authors are: that careful evaluation should be made of the blood status of every patient for whom chloramphenicol therapy is considered; that biweekly blood counts be done and the drug promptly discontinued where early signs of bone marrow injury are discovered; that the use of the drug should be limited to infections that in themselves or by their complications, endanger the life of the patient and in which this antibiotic has proved effective.

The physician should carefully weigh the possibility of these hazards resulting from the administration of chloramphenicol against the therapeutic advantages of this drug over other antibiotics not suspected of producing these fatal toxic reactions. (Editor)

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Treatment of Hypopituitary Coma

Any patient with severe hypopituitarism is liable to have episodes of a particular type of coma. The coma usually does not develop until the hypopituitarism has been present for several years, although it has been occasionally reported as occurring within a few weeks after the destruction of the gland. In many cases it follows some minor infection, or attacks of vomiting and diarrhea, or an operation. The patient gradually becomes drowsy, and, within a day or so, stuporous. She then passes into deep coma, which is sometimes

preceded by one or two convulsions. During the coma she may lie in a rigid, curled-up position and resist interference, or she may be flaccid and unresponsive to stimuli. In many cases there is no pulse at the wrist, and the heart sounds are almost inaudible. The nose and extremities are cold to the touch, the face is pale, and there is no sweating. Occasional cases have pyrexia. Ketonuria is common.

The exact cause of the coma is unknown. Despite the relative uniformity of the clinical picture, there may be several different types of functional disturbance. Some of the patients are in severe hypoglycemia, with blood sugars of 15 to 30 mg. per 100 ml.; others have blood sugars in the range of 50 to 70 mg., which is a common level in uncomplicated hypopituitarism. Some patients have normal blood electrolytes; a few have a large reduction in sodium and chloride levels. The functional disturbance in these latter cases can be interpreted either as evidence of acute adrenal insufficiency or merely as the result of the preceding attack of vomiting and diarrhea. A third group of patients have pronounced hypothermia and bradycardia, and their condition is in many ways analogous to hibernation.

The degree of hypothermia can easily be overlooked in routine hospital practice when the temperature is taken with a clinical thermometer. The mercury column has rarely been shaken down below the lowest graduation, and, when the thermometer has not "registered", the patient is recorded by the staff as merely having a low normal temperature. The significance of this point was emphasized by two recent observations on patients with myxedema (not hypopituitarism) who were admitted to the hospital in coma. Their temperatures were normal as observed with a clinical thermometer. However, when the rectal temperature was taken with a thermometer from a bacteriological incubator, it was found to be 77° F. (25° C.) in one case and 83° F. (28.3° C.) in the other.

It is not easy to assess the value of treatment of hypopituitary coma, because if the patients are not treated some of them spontaneously recover from the coma and some die. Thus the only indications of the efficacy of any particular treatment are the rapidity of the clinical response and the proportion of patients treated who do show a rapid response. At present there is little or no information about the real effect of each line of treatment, and the opportunities of obtaining this information are not frequent. The usual method of treatment in cases reported in the literature has been to give a stock combination of all therapeutic agents which might theoretically be of use. The plan was to give each patient a single line of treatment, and then to leave her for a few hours so that any response could be observed. In the cases in which no improvement resulted, a second line of treatment was tried. Clearly this method would not reveal synergistic effects of different treatment, but such synergy is quite hypothetical.

Nine examples of hypopituitary coma have been studied in 8 patients during the past 4 years. All the patients had the typical syndrome of severe hypopituitarism caused by postpartum necrosis of the anterior lobe. The

duration of the illness was from 6 to 21 years. In all cases the clinical diagnosis was made before any treatment was given for the coma. Two of the patients died, and the clinical diagnosis was confirmed pathologically. These patients were usually admitted as emergencies at times when full laboratory facilities were not available, so that treatment, in most cases had to be begun without prior information of any biochemical disturbance which might be present.

The methods investigated in these patients were: (1) no therapy; (2) the administration of large doses of glucose, to treat any possible hypoglycemia; (3) the administration of cortisone, with the object of correcting a possible acute deficiency of corticosteroid hormones; (4) the administration of sodium chloride and deoxycortone, in order to correct disturbances of electrolyte metabolism; and (5) direct treatment of hypothermia. (Brit.M.J., June 7, 1952, H. L. Sheehan and V. K. Summers)

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Use of Streptokinase and Streptodornase in Primary Closure of Posterior Wounds

The management of posterior wounds following combined abdominoperineal resections of the rectum became a problem when Czerny first performed this procedure in 1883. Since then it has remained a problem both to the surgeon and to the patient.

In performing this type of operation the surgeon must consider the following factors: (1) the posterior resection must be adequate to insure removal of the malignant growth, (2) bleeding from the cavity in the hollow of the sacrum must be controlled satisfactorily, and (3) infection must be prevented if possible.

In recent years improvement in the pre- and post-operative care of patients by use of blood transfusions, antibiotics and other chemotherapeutic aids has made it possible to give consideration to partial or complete closure of posterior wounds. Some surgeons have criticized primary closure of the posterior wound on the premise that if adequate resection is performed the skin edges cannot be approximated. This may be true if the patient is left in the Kraske or lithotomy position, but it is not so when the legs are brought together. This is quite obvious after the pack is removed the wound is probed digitally to keep the edges apart. Consequently the authors believe that primary closure can be done in most cases without jeopardizing the adequacy of the posterior resection.

Hemorrhage can be satisfactorily controlled at the time of operation just as in any other wound. The ligation of bleeding vessels is more time-consuming than the use of a pack, but it can be done with expediency and the time which is saved later by primary closure is great.

The greatest problem remaining is the obliteration of the dead space. Sutures can be placed only in those structures superficial to the pelvic bones. When this area is closed a large potential space is left between the ischial and pubic rami and the peritoneal closure. If a large pack is used in the classic manner this space is a very real one and must eventually be filled with granulation tissue before the wound heals. However, if no pack is used, normal intra-abdominal pressure, particularly after the patient responds from the anesthesia, causes the peritoneal floor to be pushed down to fill this area. If this space is kept free of all serum and blood it may be obliterated rapidly by adherence of the peritoneum to the surrounding structures. The authors believe that the use of streptokinase and streptodornase aids in attaining this latter objective. These enzymes have been used extensively at other sites and there remains little doubt concerning the ability of streptokinase to liquefy blood clots or of streptodornase to liquefy purulent exudate.

The procedure used was as follows: A wide excision of the rectum is completed with the patient in the lithotomy position. All bleeding from the operative site is controlled. The thighs are then adducted and the adipose tissue superficial to the ischial and pubic rami is sutured with interrupted chromic catgut sutures. On occasion it is also possible to suture the remnants of the levator muscles. The edges of the skin are approximated with interrupted nylon sutures placed about 1 cm. apart. Two or three Penrose drains and a 14 F. urethral catheter are left in the hollow of the sacrum and are brought out through the midportion of the incision. In an occasional case one may believe that generalized oozing from the region of the sacrum cannot be adequately controlled by ligatures. In such cases a small pack may be used to control this bleeding. The remainder of the wound is closed as noted previously, but the drains and catheter are not inserted. Two or three nylon sutures are placed in the skin at the site where the pack is brought out, and after the pack has been removed these sutures are tied to complete the approximation of the skin edges.

Postoperatively, the patient is given 2 gm. of dihydrostreptomycin per day (0.5 gm. q.i.d.) and 600,000 units of procaine penicillin daily. If a pack has been used it is removed in 48 hours, the sutures tied and a urethral catheter then inserted into the presacral space. Seventy-two hours postoperatively 100,000 units of streptokinase and 20,000 units of streptodornase in a total volume of 20 cc. are injected into the urethral catheter. During the injection the patient is lying supine, and he is kept in this position for from 4 to 6 hours so that the solution may puddle in the hollow of the sacrum. Then the patient is free to get up and move about as he wishes. Usually there is a large amount of drainage (dissolved blood clots and necrotic tissue). This process is repeated every other day for a total of from 4 to 6 instillations. After the last instillation all drains and the catheter are removed. Also postoperatively the wound is daily exposed to the air and to dry heat from a heat cradle. The dermal sutures are removed between the seventh and ninth days, or earlier if there is undue reaction around them.

The results in a limited number of cases have been so gratifying that the authors have felt justified in reporting the use of this method. (Proc. Staff Meet., Mayo Clin., June 18, 1952, O. H. Beahrs and G. L. Jordan)

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Pulmonary Coccidioidomycosis

Persons showing residual effects of primary infection with Coccidioides immitis are now observed in every part of the United States. This is because during World War II hundreds of thousands of troops were stationed for training purposes in the endemic regions, and made possible exposure to and infection of these individuals with this organism. Of special interest to the authors was that latent, apparently innocuous, residual lesions of the primary infection may reactivate, producing focal or disseminated pathologic activity.

Coccidioides immitis also causes disease in cattle, sheep, and dogs. Emmons (1943) found rodents infected as well, and suggests that the disease may be primarily one of rodents, and that as the result of contamination of the soil by their excreta, the disease is propagated to man. The disease is dust-borne, and the infection rate is highest in the dry summer and autumn seasons. Coccidioides immitis has been cultured from the soil. Paving roads and runways, spraying oil on athletic fields, and planting lawns considerably reduces the incidence of infection.

Comparable to the epidemiologic experience on the part of the native population in an endemic area, our troops experienced little or no clinical illness or physical disability following a variable period of exposure to the fungus. The service records indicate that, for the most part, cases showing residual coccidioidal lesions since leaving the training area, did not seek medical attention during the period of exposure. According to Smith 25% of the military personnel became infected. A good number, however, became ill and were hospitalized. Fortunately, the total number that succumbed to the infection was small. It occurred when the disease assumed a disseminated character.

Long considered a serious disease with an expected fatal evolution, coccidioidomycosis was regarded as the dread disease of the Southwest until it became known that a mild form of the infection prevailed. Knowledge concerning the disease was later implemented by mycologic studies which demonstrated the presence of Coccidioides immitis "spherules," or the parasitic form of the fungus, in cultures of material from coccidioidal lesions. Thus developed a fuller understanding of the epidemiology of the disease, when it became known that the saprophitic form of the organism, the clamydospore, is confined to the soil of the endemic area, whereas the sporangia, or "spherules," are the parasitic elements of the organism found in the infected human. Later, observations pointed to the phenomen of antigenicity, when it

became known that within days or weeks following infection, the person developed a positive skin test to the coccidioidin antigen. A corollary to the positive coccidioidin skin test is the occurrence of erythema nodosum or erythema multiforme in newly infected persons. The incidence of this manifestation is approximately 2 to 5 %, and is considered to be caused by tissue sensitivity initiated by the presence of circulating coccidioidal antigen.

The disease is characterized by two principal forms: 1. The influenzal or pneumonic type, and 2. the disseminated form, or coccidioidal granuloma. The former has its pathologic manifestations focalized in the thorax, whereas the latter shows invasion of the skin, the osseous and nervous systems, having metastasized by way of lymph-hematogenous channels from the lungs.

The latent, or inactive, residual foci of infection with Coccidioides immitis have a variety of roentgenologic findings, and are potentially capable of pathologic reactivation, and/or anatomic mutation. The roentgenologic elements observed were: cavity with surrounding pneumonitis; cavity without pneumonitis, both single and multiple, coccidioidal nodule, single and multiple; and coccidioidal mass or granuloma. Regarding the manifestations of reactivated latent lesions, two particular phenomena were noted: Hemorrhage as part of a focal reactivation, and dissemination by way of the lymphatic system with involvement of the corresponding lymph nodes. A third phenomenon observed was an anatomic mutation in a case presenting dissemination. In this case the initial granuloma masses finally changed into a cavitary form residual.

Although the vast majority of patients harboring residual coccidioidal lesions are maintaining a good health status, a certain proportion have already experienced pathologic reactivation, and are expected to reactivate at any time.

It is the authors' opinion that, in spite of the comparatively low incidence of the disseminated form of coccidioidal residual reactivation, it is an ever-present danger, and may prove fatal. (Dis. Chest, July 1952, M. H. Joress and B. P. Bushueff)

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Comparative Utilization of Intravenous Invert Sugar and Glucose

Recent reports have stated that invert sugar and fructose are utilized more efficiently than glucose by the human being when administered by intravenous injection. It would appear important to determine whether or not these substances are superior to glucose, as glucose is so widely used clinically in parenteral alimentation.

Under the conditions reported in this article, glucose injected intravenously is better retained in human beings than is invert sugar. Glucose is the only hexose known to be reabsorbed from the glomerular filtrate in any significant quantity. In order for fructose, which comprises half of invert

sugar, to be retained to any appreciable degree, it would be necessary that it be removed from the circulation quite rapidly, presumably by conversion to glycogen, in order not to be lost in the urine. Although fructose appears to be converted to glycogen more rapidly than glucose, it has also been demonstrated that, after the oral ingestion of small amounts of fructose, it appears in the urine despite the blood fructose level remaining quite low. Woodyatt and associates found a lower tolerance for fructose than for glucose when the sugars were administered by constant intravenous injection.

The reasons for the discrepancy between the authors' findings and those reported elsewhere are not clear. Even if fructose were retained to a greater degree than glucose, it does not seem that there should be a very marked difference between the retention of 10 or 15 % invert sugar and 10 % glucose. A solution of 10 % invert sugar must actually be considered as a solution of 5 % glucose containing 5 % fructose. The reports of Weinstein are based on urine collections continued for 3 hours after the injection of invert sugar has been completed. It may be that significant additional quantities of sugar appear in the urine after this time, thus accounting, at least in part, for the difference found in the authors' results, which were based on 24-hour urine collections. It would appear that further studies are needed to determine to what degree fructose is utilized in the human being. These studies should include investigations of retention after repeated administrations as well as determination of retention after single injections.

A greater quantity of reducing sugar appeared in urine collected over a 24-hour period from patients receiving 1-liter infusions of 10 % invert sugar than from those receiving 10 % glucose. This was noted in patients who received oral feedings as well as in those from whom food was withheld. It would appear dubious that invert sugar or fructose is as well utilized by the human being as is glucose. (Surgery, May 1952, J. L Smith, J. M. Beal and Peggy Frost) See U. S. Navy Medical News Letter, Vol. 18, No. 5, page 4, 7 September 1951.

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Clinical Study on the Effects of Procaine Amide (Pronestyl) on the Heart

Several papers have been published describing the results obtained with procaine amide in different types of cardiac arrhythmias. Most authors agree on its efficacy in ventricular arrhythmias and on its lesser therapeutic value in auricular arrhythmias. McCord and Taguchi and Schaffer and associates recently published the results they obtained with procaine amide on different types of auricular arrhythmias. From the experimental point of view, Wedd and associates studied some of the pharmacologic properties of procaine amide in the turtle heart. The authors have also studied some effects of this drug on the hearts of dogs. In this article, reference is made to the main

observations encountered in these experiments with dogs and to the authors' clinical experience in using procaine amide.

From the experimental study in animals and the clinical study in human beings on certain actions of procaine amide, the following conclusions can be drawn:

1. Procaine amide increases the threshold of excitability and slows down the speed of conduction in both the auricles and the ventricles.

2. It shows little effect on the auriculoventricular conduction when the heart maintains sinus rhythm.

3. The impairment of atrioventricular and intraventricular conduction is greater when the rate of the pacemaker is higher.

4. Administration of procaine amide given in equal doses has a greater effect on intraventricular conduction when administered in a single intravenous injection than is slowly administered venocysis.

5. Procaine amide is effective in auricular disorders. It clears up auricular extrasystoles and supraventricular paroxysmal tachycardia, and can slow down the rate of auricular fibrillation or flutter. Since paroxysmal auricular tachycardia responds favorably to acetylcholine or its derivatives, the use of procaine amide should be reserved for those cases in which acetylcholine is ineffective or contraindicated.

6. Procaine amide should be the drug of choice in cases of arrhythmias of ventricular origin (extrasystoles, ventricular flutter, and paroxysmal ventricular tachycardia). Because it is active either orally or intravenously, it should be administered by either route according to the severity of the case.

7. In cases of auricular flutter, the use of procaine amide is dangerous because it can lead to a 1:1 atrioventricular response with aberrant intraventricular conduction, eventually inducing ventricular flutter or fibrillation. In cases of paroxysmal auricular fibrillation, procaine amide may re-establish a sinus rhythm but it does not seem to be completely without danger.

8. In the treatment of arrhythmias caused by overdosage of digitalis or its derivatives, it should be kept in mind that while procaine amide can clear up ventricular extrasystoles produced by digitalis, its improper use can favor the occurrence of ventricular flutter or ventricular fibrillation. This danger may be reduced by giving procaine amide by a slowly administered venoclysis, while constantly checking the electrocardiogram. (Am.Heart J., June 1952, J. Zapata-Díaz, E. Cabrera C., R. Méndez, Mexico City, Mex.)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Navy Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

Pathologic Findings in Patients Dead of Common Poisons

Deaths due to poison make up 5% of all cases requiring medicolegal investigation.

The salient anatomic findings in deaths due to the common poisons are described.

Clinical symptomatology, time and type of death, and the availability of various poisons must be considered in conjunction with the pathologic findings in cases where the issue of poisoning presents itself for consideration.

Poisons injure and kill by local action at the portals of entrance and exit from the body, by distant action following absorption or by a combination of these two mechanisms. The nature and distribution of the lesions are frequently a function of the concentration of the chemical at the sites of entrance and exit. While some substances are "general protoplasmic poisons," damaging tissue universally, others have a selective action. Hepatotoxic action is due to a combination of factors including concentration of the ingested poisons by the portal circulation, specific liver metabolism in detoxification mechanisms, and excretion of the poison via the biliary system.

Poisons can be divided into 4 groups on the basis of their pathologic manifestations:

(1) No morphologic change present that can be attributed to the direct chemical action of the agent. The lesions present are the result of terminal anoxia (carbon monoxide, barbiturates). Many poisons potentially capable of producing structural alterations fall into this category when the dose is sufficiently large to kill, before the lesions have had a chance to develop.

(2) Systemic lesions with no injury at the portal of entry: hemolytic poisons, arsine, snake venom.

(3) Injury at the portal of entry without remote or systemic evidence of direct injury: gaseous irritants, e.g., chlorine

(4) Local and systemic injuries: heavy metals.

Poisoning cannot be excluded although death appears to have occurred as a result of other causes. Suicidal poisonings may be arranged to simulate accidental death by fire or auto accident. The victim of homicidal poisoning may be old and with sufficient arteriosclerotic heart disease at autopsy for his death to be attributed to a natural cause if one is not alerted to the possibility of poisoning.

There are no simple screening tests generally applicable for the detection of all poisonous agents. When the presence of a poison is suspected and the anatomic findings are nonspecific, a "general unknown" must be run by the toxicologist.

The survival period from the time of suspected poisoning to the time of death and the clinical symptomatology may give valuable leads as to possible agents. The following data indicate the period of survival and the outstanding clinical features after intake of a lethal quantity of the poisons listed:

A. Death in a few minutes: carbon monoxide, cyanide, nicotine, strychnine
B. Death in a few hours:
Coma: carbon monoxide, morphine
Gastrointestinal: arsenic, phosphorus, fluoride, oxalate
C. Death in 24 hours:
Coma: alcohols, barbiturates
Gastrointestinal: heavy metals, phosphorus
Central nervous system: camphor, methyl salicylate
Respiratory: nitrogen oxides, phosgene
D. Death in several days:
Gastrointestinal: heavy metals
Central nervous system: alcohols, barbiturates, lead
Hepatotoxic: carbon tetrachloride, chloroform, phosphorus
Renal failure: mercury, glycols, chromate
Blood (methemoglobinemia): chlorates, nitrates, acetanilid

The pathologist must keep in mind the possibility of poisoning in all sudden and unexpected deaths, in all cases where there is no adequate gross or microscopic cause of death, and in those instances where there are findings indicative of corrosion or where the pathologic changes do not correspond with those of natural disease. Under these circumstances, blood, urine, feces, gastric content, and viscera (liver, kidneys, and brain) should be saved in chemically clean containers, properly sealed and labeled for identification. If chronic arsenic poisoning is suspected, hair and nails should be set aside. The wisest plan is to save everything, so that duplicate tests may be run as checks. The fluid material should be conserved carefully and as much blood as can conveniently be obtained should be set aside.

Sealing and labeling are important in the event that the findings are to be presented in court. Although only a small number of all deaths from poison are the result of criminal action, many fatalities in this category are associated with the possibility of civil action. Here the results of the autopsy and the analysis of material obtained at autopsy may well be the deciding factors in reaching a just verdict.

Positive evidence of death by poisoning requires:

(1) Toxicologic proof: Isolation of the poison from the tissues in lethal quantity.
(2) Pathologic proof: Any lesions present must be consistent with those that may be caused by the isolated chemical agent.

(Am.J.Clin.Path., June 1952, L. Adelson)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 23 June 1952.

Complications Following Transtracheal Anesthesia

Transcricoid instillation of cocaine for topical anesthesia of the larynx was first suggested by Caynut in 1920. Little had been heard of this method of topical anesthesia in this country until 1948 when Harkins and Salzberg hailed it as being most suitable for endoscopic procedures of the trachea and bronchi. Bonica likewise has extolled the value of this method of anesthesia for facilitating insertion of endotracheal catheters.

The authors were reluctant to adopt the method for two reasons. (1) The needle must be introduced through the skin and tissues of the neck into the trachea. When it is withdrawn, it is no longer clean in a surgical sense and the possibility of contamination of healthy tissue exists. Many patients in whom endoscopic studies or endotracheal intubations are indicated have suppurative diseases of the lung, and the trachea is not free of virulent bacteria. (2) A needle of a small bore must be used. Regardless of precautions exercised, many patients are uncooperative and cough or make attempts to swallow while the drug is being instilled. Breakage of the needle appeared to be a likely complication. After noting the seemingly good results and the enthusiasm of our colleagues the authors conditionally adopted the method. During the past 2 years they attempted approximately 350 instillations, using either 2 cc. of 4% cocaine or 2 cc. of 2% pontocaine to obtain topical anesthesia for endotracheal intubation. On the whole the results have been most gratifying but in two instances each of the complications feared was encountered.

Transcricoid instillation of local anesthetics for inducing the topical anesthesia undoubtedly deserves a place in medical practice. The technic is not as innocuous as has been supposed and can be followed by serious complications. Harkins et. al. encountered 3 cases of superficial cellulitis in their series of over 1,000 instillations, 2 of which required incision and drainage. It may be that antibiotics, used almost routinely after operation, have accounted for the absence of infection in the authors' cases and in the cases of others. The majority of patients in whom the authors employed the technic received antibiotics postoperatively. (Am. J. Surg, July 1952, J. Adriani and J. Parmley)

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Exercises Following the Bankart Operation for Recurrent Shoulder Dislocation

The object of this study was to determine whether postoperative exercises for patients with recurrent shoulder dislocations had resulted in an earlier increase in the range of shoulder motion, greater improvement in strength, and a shorter average recovery period in comparison with patients who did not receive similar supervised activity.

Sixteen patients at a naval hospital were referred to the Rehabilitation Section only 3.4 weeks after operation. Twenty-four patients from a non-military hospital were not exercised under supervision in a physical medicine department.

In the military hospital the 16 patients were given an early and intensive definite exercise program. The importance of full range of motion was first stressed and then increase in the strength of the shoulder joint musculature was sought. The exercises took place under closer supervision and for a longer time than was permitted the nonmilitary patients. The Velpeau bandage was removed and the patient was given his first shoulder activity on the ward about 2-1/2 weeks after operation. Codman's stooping exercises were started. The principle of these exercises is that they allow the patient to abduct the arm with the aid of gravity and so no fulcrum is needed either on the glenoid or the acromion or both. Because no fulcrum is necessary in the stooping position, either lateral or antero-posterior motions can be performed with a pendulumlike movement without much muscular effort. In this position the weight of the arm actually helps to stretch the contracted tissue of the shoulder joint.

In the nonmilitary group the patient left the hospital as soon as the wound had healed and the stitches were out. General shoulder exercises were advised, on an out-patient basis, an average of 4.4 weeks postoperatively. The patient would report to the follow-up clinic for examination and instruction regarding the type and extent of activity. Because the main objective at this hospital was to discharge the patient as soon after operation as possible, a shorter stay was imperative and little or no daily, progressive, supervised corrective therapy was administered.

In comparing the results of those who had the exercises with those who had no definite plan or supervision it was found that the former regained range of motion and strength sooner and returned to duty earlier. After 3 weeks in physical medicine activities most of the supervised group could raise 50 to 75 lb. or more over their heads with the "two-hands press." The patients on a definite program were sent to the corrective therapy section earlier and, on the average, it required less than 2-1/2 months after operation for them to reach a maximum range of motion. They were able to return to full duty. This is compared to an average of 5 months for those who were not on a definite planned program. (Arch. Phys. Med., June 1952, J. L. Rudd and E. F. Haydock)

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Induction of Artificial Pneumothorax by Lung Puncture

Selikoff et al. (1948) advocated the induction of artificial pneumothorax by deliberately puncturing the lung with a fine-bore needle, thus allowing air to leak from the alveoli into the intrapleural space. Experience with this simple, safe, and reliable procedure in 78 cases is reported.

The patient, in bed, is placed in the usual position for induction of an artificial pneumothorax; the skin of an intercostal space, over an area of lung radiologically free from disease, is prepared; the syringe is charged with local anesthetic; and a skin bleb is raised. The infiltrating needle is then slowly pushed deeper into the chest, and the piston is drawn back with each advance until air-bubbles sucked freely into the syringe show that the lung has been punctured and an intrapleural space found. The operation is now over and the needle should be withdrawn immediately. If air-bubbles cannot be aspirated freely after entry of the needle to such a depth that the lung must have been reached, it can be assumed that the layers of the pleura are adherent and a pneumothorax cannot be obtained at that site. With an adherent pleura, all that can be sucked into the syringe on puncture of the lung is a little frothy blood. Needling by a similar technique in other sites can be safely tried at the same sitting, but it is unusual to obtain a satisfactory space if the first attempt fails; for either pleural obliteration is complete or adhesions ultimately prove so widespread that their section is impossible.

When this simple operation has been successfully completed, the patient is asked to stay in the lateral position for 15 minutes and to rest quietly for 24 hours. Some pains are usually experienced in the chest within a few hours, and if they do not occur one or two short coughs should be given by the patient to increase the leakage of air from the lung into the pleura. Twenty-four hours later, when a chest radiograph is taken in forced expiration, a pneumothorax is usually apparent; fluoroscopic screening is less reliable, even when dark-adaptation is complete, because the collapse is often shallow and the lung edge difficult to distinguish, particularly in obese patients. Occasionally, the amount of air escaping is insufficient to produce a visible pneumothorax; but, provided air-bubbles flowed freely into the syringe at induction, the subsequent procedure is the same. At the induction site and by the technique described above, the chest wall is infiltrated, air-bubbles being aspirated as the parietal pleura is pierced, and a sharp-pointed refill needle with a terminal aperture, e.g. a Saugmann or a fine Peter Edwards needle, connected to a pneumothorax apparatus is introduced. The amount and timing of this first refill depend on the degree of collapse shown by radiography. When this is small or absent, the introduction of air should not be delayed; and if the intrapleural pressures are satisfactory, from 200 to 400 ml. can usually be given. In such cases further injury to the lung can be avoided by encouraging quiet respiration throughout the procedure and by inserting the refill needle carefully to the minimum depth necessary to obtain readings. If, however, a good collapse is seen, the refill can be postponed until screening indicates that reabsorption is taking place. The subsequent management of the pneumothorax follows the customary pattern.

Since January 1949, 78 pneumothoraces have been attempted by this method, with success in 71 and failure after at least 2 lung punctures in 7 cases. In 3 of the failures the traditional technique using a Küss induction needle was used, but without effect.

The amount of collapse seen on the subsequent radiograph or fluoroscopic screening varied considerably, but a shallow artificial pneumothorax was the usual finding. In a few cases no space was visible until air was introduced by the method described. In 2 cases the lung collapsed to less than half its normal volume within 24 hours of induction; the patients were mildly dyspneic, and aspiration of air was deemed advisable. The first refill was given 24 hours after induction in 40 cases, on the second day in 21, on the third day in 6, on the fourth in 2; in the 2 patients who required deflation no refills were necessary for 7 and 15 days, and subsequent conduct of the artificial pneumothorax was uneventful. Apart from these 2 patients and another 2 in whom a trace of fluid developed in the costophrenic angle immediately after induction, no complications which could be ascribed to the method were experienced. (Lancet, 28 June 1952, E. N. Moyes and J. K. Scott)

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The Treatment of Hyperhidrosis of Hands and Feet With Constant Current

One hundred and thirteen patients with hyperhidrosis of the hands and feet have been treated with constant current since the initial experimental series. The treatment was effective in 103 patients; 6 patients in whom constant current treatment alone was not effective were improved by subsequent aluminim ion transfer. In the remaining 4, inadequate or no improvement was obtained.

The practical clinical application of this method was extremely simple. For the treatment of the hands 2 enameled or plastic photographic trays were used with a metal electrode lying flat on the bottom. Aluminum plates can be used and have advantages because they are stiff and easy to clean, but any electrode material commonly used in a physical medicine department is equally adequate. The electrode was covered with a heavy layer of cellucotton. The trays were filled with tap water to such a level that the palm of the hand when resting comfortably on the cellucotton was covered. So that no painful surface effect was evident, a thin layer of cold cream or vaseline was usually applied on the sides of the fingers at the level at which the surface of the water touched the hand. All cracks and open areas on the palmar surface of the hand were covered with cold cream or collodion. After a few treatments when the hands begin to dry up, this will no longer be necessary. It should be realized that these cracks are often the result of continued hyperhidrosis and that the treatment is not aimed at treating these spots but at an over-all reduction of the sweat secretion which will also result in healing of secondary maceration and dermatitis. In view of the fact that hyperhidrosis is always symmetrical, two active electrodes were used and no dispersive electrode

was needed. The polarity of the electrodes was changed from treatment to treatment. The treatments lasted from 20 to 30 minutes; the current intensity depended on the tolerance of the patient and the treatments were repeated daily or on alternate days until the hyperhidrosis disappeared. The patient was informed of the temporary character of the effect and was told to return when hyperhidrosis again developed. The effectiveness of the treatment was such that no urging was necessary. The treatment of the feet was essentially similar to that of the hands. Photographic trays can again be used. Earthen crocks with the electrode at the bottom and again covered with cellucotton have proved equally effective. Any constant current generator which is able to give an adequate current strength is satisfactory. In view of the fairly large area being treated, current strength up to 50 or 75 milliamperes is sometimes necessary. As in all repeated ion transfer procedures, it is often found that the current tolerance increases in subsequent treatments. Tap water is usually a good enough conductor. In localities where the water is unusually salt-free, addition of salt may be necessary. All usual precautions against sudden interruption of the treatment-current must be carefully observed in view of the strong currents used. (Am. J. Phys. Med., June 1952, H.D. Bouman and E. M. G. Lentzer)

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Succinylcholine

A drug capable of giving, in the anesthetized patient, a brief but complete muscular relaxation is required for intubation, electroconvulsive therapy, orthopedic manipulation, and other purposes. The very short duration of action of succinylcholine (succinoylcholine) in experiments on laboratory animals, and its other pharmacologic properties, suggested that it might fulfill this need.

The chemistry and pharmacology of succinylcholine are outlined, and its use in 546 patients is described. It is a safe and effective muscle relaxant, particularly valuable in short procedures such as intubation, electroconvulsive therapy, and orthopedic manipulation. It may also be used to supplement relaxation when the effects of a long-acting relaxant are waning. In doses required for such procedures it is remarkably free from side-effects.

Succinylcholine is generally very short in its period of action. In all but a few patients the relaxant effect of a single dose, judged by the duration of apnea, did not exceed 8 minutes. In a few people it exceeded 8 but not 15 minutes. The bloods of 6 persons who recovered abnormally slowly were examined and showed low plasma-cholinesterase levels.

In long operations succinylcholine has been given alone either by repeated injections or by continuous intravenous drip. In spite of the satisfactory experience of Von Dardel and Thesleff (1951), who used lower doses, the authors consider that long-continued infusion of heavy doses of succinylcholine may have disadvantages, such as a steady rise in blood pressure and a delay in recovery. It is also a cumbersome procedure. (The Lancet, June 21, 1952, J. G. Bourne; H. O. J. Collier; and G. F. Somers)

An Evaluation of Pituitary Adrenocorticotropic Hormone (ACTH) in the Treatment of Severe Burns: Relationship to Skin Grafting

The use of pituitary adrenocorticotropic hormone has been studied in its relation to 3 aspects of the treatment of severely burned patients. The effect of ACTH on homograft survival was observed in 2 patients. Therapeutic effects of the drug were noted and analyzed in a series of 11 patients. Finally, animal experimental studies were conducted to record the effect of ACTH on burn wound healing.

The authors' findings substantiate current reports that ACTH does not promote permanent survival of homologous skin grafts. They have reported 2 homograft cases in which transplants disintegrated in 14 and 8 weeks respectively. In the case of the 14-week survival of homologous skin grafts, complete dissolution occurred almost immediately after ACTH therapy has been discontinued. Prior to this, the patient has appeared to be entirely healed with no clinical evidence of impending loss of grafts. In the second reported case, homografts disintegrated at 8 weeks while the patient was receiving a maximum dosage of ACTH. A checkerboard placing of autogenous stamp grafts between the homografts facilitated healing in this patient. The autografts epithelized over denuded areas as dissolution of homografts occurred. The authors noted, moreover, that the patients under hormonal therapy evidenced a good initial response to homografting with complete take of the transplants. These patients were also better able to re-establish physiological balance until such time as autogenous skin grafting could be accomplished.

The clinical and laboratory data on the series of 11 patients indicate that ACTH does have therapeutic value in the treatment of the severely burned. During administration of the drug, there was a return of normal body temperature, an increase in appetite and an ameliorated psychological adjustment. The gross appearance of the burn wounds evidenced diminished exudate and decreased formation of granulation tissue. Blood chemistry studies, including nonprotein nitrogen, serum proteins, chlorides, and potassium levels, as well as hematologic studies, reflected the physiologic stability of the patients and substantiated the beneficial effect of the drug.

It is the authors' belief that the therapeutic value of ACTH is primarily in the later phase of healing. This applies particularly to patients who have responded poorly to previous treatment. Their observations showed that ACTH therapy greatly benefited the debilitated patient and stimulated a better response to further treatment. It is apparent that the patient who is recovering without difficulty does not require this form of therapy. No evidence that ACTH prevents death in severely burned patients was found. Moreover, hormonal therapy administered immediately after injury effected no significant changes which could be attributed to further stimulation of the pituitary adrenal system. A recent discussion by Sevitt on adrenal cortical activity in initially burned patients demonstrated that there is no need for exogenous stimulation at this time. He reported sufficient endogenous adrenal cortical

response to burn trauma as manifested by a marked eosinopenia, lymphocytopenia, and initial neutrophilic leukocytosis.

Early reports on ACTH postulated that vascular permeability is so diminished by action of the drug that fluid therapy is unnecessary in the period of burn shock. Raker, however, has stated that ACTH does not preclude the need of the burned patient for fluid therapy in the acute stage following injury.

Considerable difference in the degree of response to hormonal therapy was observed in this series of patients. The reactions to the eosinophil test indicated that the adrenal glands vary individually in sensitivity to stimulation. In this connection, Evans recently presented data on burned patients correlating the eosinophil counts with adrenal cortex function to determine the selection of burned patients for whom hormonal therapy was advisable. In the authors' group of patients, dosage was flexible and determined by the patient's response to adrenal stimulation, as indicated by the level of the eosinophil counts as well as by clinical and laboratory findings. When the maximal effect was attained, the maintenance dose was administered as long as necessary and was then gradually decreased as the patient recovered.

The authors' experience indicates that a knowledge of the side effects and precautions to be observed is paramount in any clinical application of ACTH therapy. Because of possible glandular hyperfunction, careful clinical and laboratory supervision of each patient is required. Exaggerated clinical side effects necessitate a lowering of dosage or a discontinuation of therapy. Increased susceptibility to infection should be considered. Furthermore, because symptoms of disease are concealed during hormonal therapy, infection must be anticipated at all times. However, with adequate antibiotic therapy, disease or infection does not contraindicate the use of ACTH in the treatment of the severely burned.

Experimental laboratory animals were used in an effort to determine the effect of ACTH on burn wound healing. The animals were also observed for generalized reaction to therapy as indicated by variations in body weights. The rate of wound healing was approximately the same in the control and treated animals. However, the authors were unable to produce and control debilitating wounds in animals comparable to extensive burns in man. For this reason, experimental findings on the rate of wound healing appear insignificant when compared with the clinical observations. Body weight variations indicated that the use of ACTH did have some effect, over 30-day periods, the control animals lost weight, whereas animals receiving ACTH showed considerable gain.

The indirect beneficial effect of pituitary adrenocorticotropic hormone in the treatment of severely burned patients is supported by clinical and laboratory findings. It is the over-all physiologic and psychologic benefits induced by hormonal therapy that comprise the value of ACTH for these patients. However, because of the known side effects and the unknown element of a drug in the early stages of its clinical application, judicious supervision of each case is essential. Further investigations on the use of ACTH in the treatment of the

severely burned are necessary to confirm the value of the drug in widespread burn therapy. Until such time, ACTH should be used cautiously and never indiscriminately. (Plast. & Reconstruct.Surg.,May 1952, H. M. Trusler; S. Glanz; and T. B. Bauer)

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Symptoms of Common Duct Stones

The classic symptoms of pain, jaundice, chills and fever, and nausea and vomiting are considered indicative of common duct stones. One or all of these symptoms may be absent. Trueman, in a review of 219 cases of common duct stones from the Mayo Clinic, found no pain recorded in 22.3%, no jaundice in 39.3%, and no chills and fever in 65.8%.

In this study, pain, dating back months or years, was a characteristic symptom in those patients in whom stones were found in the common duct. The type of pain is important. It is usually located in the epigastrium when stones are present in the common duct. Severe pain suggests cystic duct or common duct obstruction with distention.

A history of jaundice or existing jaundice is not positive evidence of common duct stones. Intermittent, existing, or a history of jaundice was present in 79.5% of the cases in which stones were not found in the common duct. Inflammation about the cystic and common ducts may cause pressure and edema with subsequent jaundice.

Chills and fever are caused by infection within the biliary ducts, and such infection may be present in patients with or without stones in the common duct. In this study, these symptoms were present in 40.2 and 37.2% of the patients, respectively.

Nausea and vomiting were the symptoms most helpful in differentiating patients with common duct stones from those without common duct stones. Nausea and vomiting were present in 86.2% of patients with stones, in contrast to 17.9% of patients without stones. In 1928, Schrager and Ivy demonstrated in dogs that pronounced vomiting followed distention of the cystic duct in 87%. When an obstruction was placed in the ampulla of Vater, pronounced vomiting occurred in 91% of the dogs. In 1933, Zollinger showed experimentally that in humans distention of the common duct is always followed by pronounced nausea and vomiting. He recommended that the common duct be explored in all cases in which there are significant nausea and vomiting.

Indications for exploration of the common bile duct in series of 165 patients were (1) palpation of common duct stone; (2) dilatation or thickening of the common duct; (3) small stones in the gallbladder with a patent cystic duct; (4) abnormal bile, with sediment, on aspiration of the common duct; (5) existing, intermittent, or a history of jaundice; (6) evidence of cholangitis; and (7) thickening of the head of the pancreas, or evidence of chronic pancrea-

titis. As a result of this study the authors believe that the following symptoms should be added indications for exploration of the common duct at the time of gallbladder surgery; (8) pronounced nausea and vomiting; and (9) epigastric pain. (A.M.A. Arch. Surg, June 1952, E. L. Strohl; W. G. Diffenbaugh; and V. Guynn)

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Training Opportunities for MSC and HC Officers

Training Opportunities for MSC (Supply and Administration Section only) and HC Officers.—Courses of instruction currently available to Medical Service Corps officers of the Supply and Administration Section and Hospital Corps officers serving on active duty are listed below. Class quotas are limited and it is recommended that interested officers submit requests well in advance of the beginning dates of the courses. Requests for the courses should be submitted in letter form, via official channels, to the Chief, Bureau of Medicine and Surgery (Attention: Code 345)

Available to MSC and HC Officers. Officer's Course—Naval School of Hospital Administration, Bethesda, Md.— A 10-month course, beginning in September each year. Intensive classroom and practical instruction in all phases of Medical Department administration, with emphasis on naval hospital personnel administration, finance, and accounting, and food service management. Courses are also given in business English, effective speaking, military justice, and in many other fields of interest to the medical administrative officer.

Sanitary Science — University of California, Berkeley, Calif. — A 5-month course beginning in February and September each year. Undergraduate work in environmental sanitation, public health statistics, rodent control, venereal disease control, epidemiology, and other phases of the Public Health field. The course includes a 1-month period of actual field work in the San Francisco area, under the direction of members of the University faculty.

Advanced Food Service—Army Quartermaster School, Fort Lee, Va.— A 28-week course beginning each month. Courses include nutrition and menu planning, sanitation and salvage, methods of cooking, baking, meat cutting, and actual operation of a 1,000-man mess.

Laundry Management—Army Quartermaster School, Fort Lee, Va.— An 8-week course designed to train officers in the operation of static and mobile laundry equipment and static dry cleaning equipment. Classes convene every 2 months.

Procurement—Army Quartermaster School, Fort Lee, Va.— An 8-week course in Armed Forces procurement methods and procedures for supplies, equipment, and services. Of special value and interest to MSC and HC officers assigned to duties in the finance or supply fields. Classes convene 4 times a year.

Available to MSC (Administration and Supply Section) only— Two academic years of instruction in undergraduate subjects in the School of Hotel Administration with emphasis on the management and operation of an institutional food service department. Classes convene in February and September of each year. Officers completing the course may anticipate assignment to duty as Head of the Food Service Division of one of the larger naval hospitals.

Hospital Administration — Brooke Army Medical Center, Fort Sam Houston, Tex. — A 10-month course beginning in September each year and covering all phases of hospital administration from the standpoint of the Army Medical Administrator. The course is of special interest and value to MSC officers who may be assigned to duties with Navy units in Army Medical installations.

NOTE: This notice cancels and supersedes similar notice which appeared in Vol. 19, No. 6, page 26, Medical News Letter, 21 March 1952 (Professional Division, BuMed)

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Information for Medical and Dental Officers

Special Committees are being organized in State and local Medical and Dental Societies to help you find locations upon release from the Armed Forces, in States that are urgently in need of physicians and dentists both for practice and for residency training.

Inquiries detailing the type of location or training opportunity that you desire can also be made directly to the American Medical Association and the American Dental Association.

Attention is also called to the existence of shortages both for training and practice in certain medical and dental specialties.

Below is a partial list of such shortages with the names and addresses of an authority who may be contacted for detailed information in each category:

Public Health.—Physicians with or without special training to become full-time health officers, bureau chiefs in official health departments, and executives in voluntary health agencies.

Write to: The nearest state health officer, or Surgeon General, U. S. Public Health Service, Federal Security Agency, Washington 25, D.C.

Industrial Medicine.—Physicians to become full-time medical directors in various industries, or staff members in industrial medical departments.

Write to: Carl M. Peterson, M. D., Secretary, Council on Industrial Health, American Medical Association, 535 North Dearborn Street, Chicago, Ill.; or Dr. Edward W. Holmblad, Managing Director, Industrial Medical Association, 28 East Jackson Boulevard, Chicago, Ill.

Psychiatry and Child Psychiatry

Write to: Austim M. Davies, Executive Assistant, American Psychiatric Association, 1270 Avenue of the Americas, New York, N. Y.

Pathologists for hospitals and for teaching positions in medical schools.
Write to: Melbourne G. Westmoreland, Executive Secretary, College of American Pathologists, 203 North Wabash Avenue, Chicago 1, Ill.
Anatomists for teaching and research in gross and microscopic anatomy and embryology in medical schools.
Write to: Normad L. Hoerr, Secretary, American Association of Anatomists, 2109 Adelbert Road, Cleveland 6, Ohio.
Bacteriologists and Virologists for teaching and research in medical schools.
Write to: John E. Blair, Ph.D., Secretary, Society of American Bacteriologists, 1919 Madison Avenue, New York 35, N. Y.
Medical Biochemists and Physicists
Write to: Richard W. Jackson, Ph.D., Secretary, American Society of Biological Chemists, 825 N. University Street, Peoria 5, Ill.
Medical Hospital Administrators for superintendents and assistant superintendents of the larger hospitals.
Write to: Mr. George Bugby, American Hospital Association, 18 East Division Street, Chicago 10, Ill.; Mr. Dean Conley, American College of Hospital Administrators, 18 East Division Street, Chicago 10, Ill.
Physiologists
Write to: American Physiological Society, Milton O. Lee, Ph.D., Secretary, 2101 Constitution Ave., Washington, D. C.
Anesthesiologists
Write to: American Society of Anesthesiologists, Inc., John H. Hunt, Executive Secretary, 188 W. Randolph St., Chicago, 1, Ill.
Physicial Medicine and Rehabilitation
Write to: Dr. Robert L. Bennett, Warm Springs Foundation, Warm Springs, Ga.

For information regarding the following specialties in dentistry you may write to Dr. Harold Hillenbrand, Secretary, American Dental Association, 222 East Superior Street, Chicago 11, Ill.: Oral Surgery, Orthodontics Pedodontics, Periodontica, Prosthodontia, Oral Pathology, and Public Health Dentistry.

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Recommended Treatment of Acute Hemorrhagic Fever

In view of the continued interest and the findings of the Army Medical Service with respect to treatment of Epidemic Hemorrhagic Fever, it is recommended that the following brief summary be used as a guide in treatment of patients with this disease.

a. Experience has indicated that fluids of any kind, oral or intravenous, are to be given in only small amounts. Because of an increased capillary permeability, fluids appear to increase edema and aggravate backache, vomiting, abdominal pain, distention, and tenderness, which are so prominent in these patients. The rule has been to withhold or restrict fluids and to

allow only small amounts orally if tolerated, the maximum being no more than the urinary output plus 500cc. to cover insensible loss. Giving larger amounts of fluid has resulted in pulmonary edema and intensification of the entire picture.

b. Since these patients have severe anorexia, food is not to be given until desired, somewhere in the second week after onset of symptoms. Vomiting may result in hemorrhage as a consequence of the stress attendant upon retching.

c. The patient should be kept at complete bed rest and should not be allowed up for any reason. Because of a hemorrhagic tendency, any trauma will initiate hemorrhage at some site. He should not be moved to another installation when he is acutely ill, but maintained at complete bed rest. Demerol has been most useful in 50-100 mg. doses intramuscularly at 3-6 hour intervals in reducing restlessness, pain, and vomiting.

d. In the presence of shock, massive intravenous fluids are of no value in toxic collapse of this character. The patient should be put up on shock blocks, legs should be wrapped with ace bandages, and small (100cc) amounts of salt-free albumin can be given intravenously. If there is no response after 1--2 units of albumin, the chance of beneficial results from further administration of albumin is small. Then 15--50 mg. doses intramuscularly of ephedrine sulfate can be tried at 30-minute intervals and the blood pressure carefully followed. If there is no response from these measures, all other measures have been found to be of no avail, including ACTH, cortisone, intravenous fluids, and blood. In fact, such measures often make the patient worse.

e. The hematocrit is to be carefully followed to watch for dramatic falls indicative of internal hemorrhage which can be treated with whole blood.

f. Most important of all, the basic factor in salvaging such patients has been in restraining the physician's desire to do something. Watchful waiting has been the keynote resulting in the lowest mortality.

For further information on hemorrhagic fever see U. S. Navy MEDICAL NEWS LETTER: Vol. 18, No. 8, page 2, 19 October 1951, Vol. 19, No. 10, page 2, 16 May 1951; and Vol. 20, No. 1, Page 17, 25 July 1952.

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Facts Concerning the Naval Reserve Officer

Four priorities have been established by the 81st Congress for inducting physicians and dentists into military service. Many of those who will be subject to call are persons who were deferred from active military service during World War II because they were participating in a military specialized training program, or pursuing a course of instruction on their own. Priorities are applied as follows: Priority 1 includes those who have had less than 90 days active duty. These must be called first; Priority 2 includes those who have had more than 90 days but less than 21 months of active duty; Priority 3 con-

sists of those who have not had active duty subsequent to 16 September 1940; and Priority 4 contains all persons not included in priorities 1 and 2, and who have had active service subsequent to 16 September 1940.

The important thing to consider about the Naval Reserve Program is the opportunity to gain promotion and to earn retirement benefits in spare time which are comparable to those enjoyed by the Regular Navy. Not only will credit be received for all active duty time, but also retirement credit for just a little effort during the years of civilian life. A Reservist becomes eligible for retirement at the age of 60 providing he has performed a minimum of 20 years "satisfactory Federal service". This service may consist of both active duty and/or association in an Organized or Volunteer Unit of the Naval Reserve.

A minimum of 50 points must be earned within 1 year, and some of these will be earned as 1 point per day for each day of active service. Fifteen points for each year of inactive service will be given for simply belonging to the Naval Reserve. Other points may easily be earned for attending authorized drills, classes, or other meetings, and also for completed correspondence or home study courses.

The Naval Reservist will have the satisfaction of helping his country to maintain a strong, stable Naval Reserve and as a reward for this service will receive substantial retirement benefits that can be figured in dollars and cents. Add the total points earned in 20 years of satisfactory service, and divide that sum by 360 days in 1 year. Multiply this quotient by 2-1/2% and multiply that result by the annual basic pay that would be received for active duty in the highest grade of service satisfactorily held. The answer is the amount of retirement pay received each year.

For example, with the basic pay of a Commander $527.25 per month and 5 years of active duty. Up to 60 points may be earned each year by inactive duty.

60 points per year x 15 years	= 900 points
5 years x 360 days per year	= 1800 points
2700 total points for 20 years ÷ 360	= 7.5
7.5 x 2-1/2%	= .1875
.1875 x $6327.00 (annual basic pay)	= $1186.31

annual retirement pay received as a reward for just a little effort during 15 years of inactive service. (Capt. L. E. C. Joers, MC, USNR)

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From the Note Book

1. A brochure on emergency treatment in major disasters has been prepared under the auspices of the National Research Council for use by the Federal Civil Defense Administration of military and civilian agencies concerned with medical treatment in major disasters. The articles represent the combined efforts of members of appropriate committees of the Council, the Division of Biology and Medicine of the Atomic Energy Commission, the Federal

Civil Defense Administration, and experts consulted because of their competence in a particular field. All articles were reviewed and approved by the committee on Surgery of the National Research Council.

2. The June 1952 issue of the Wisconsin Medical Journal, Vol. 51, No. 6 is devoted to Civil Defense. This special edition was prepared by the Committee on Civil Defense of the Wisconsin State Medical Society. The papers describe a casualty care plan that may mean the difference between life and death for thousands of residents of the State should disaster occur.

3. The authors make certain recommendations on emergency measures and precautions to be observed in radium accidents. These recommendations are made so that widespread exposure and contamination of persons and buildings may be minimized. (J.A.M.A., 28 June 1952, E. L. Saenger; R. G. Gallaghar; D. S. Anthony; and P. J. Valaer)

4. Bacterial contaminants were isolated from 38 (2.24%) of 1,697 pints of blood cultured before leaving a blood bank. Organisms most frequently isolated were nonpathogenic staphylococci. (J. Lab. & Clin. Med., June 1952, A. I. Braude; J. P. Sanford; J. E. Bartlett; and O. T. Mallery, Jr.)

5. The opinion of a group of prominent internists and surgeons concerning the use of sympathectomy for essential hypertension appears in Circulation, July 1952, E. V. Allen.

6. A discussion of the urologic procedures employed in the diagnosis of urinary-vaginal fistulas appears in Surg., Gynec. & Obst., June 1952, J. R. Longley and L. F. Greene.

7. Seven cardinal principles embodied in legislation for the reduction and control of air pollution are discussed in A.M.A. Archives of Industrial Hygiene and Occupational Medicine, June 1952, G. E. Best.

8. An article discussing the protection of airplane pilots from toxic dusts and sprays of organic phosphorus insecticide appears in Occupational Health, FSA, PHS; July 1952, R. G. Sullivan.

9. A new technique that utilizes the natural fluorescence of human teeth is being employed at the National Bureau of Standards to reveal hitherto undetected details of tooth structure. In the NBS method, fluorescent photomicrographs are obtained from the visible light emitted by very thin tooth sections under high-intensity ultraviolet radiation. The micrographs provide information on the distribution of the organic content of enamel and dentin and show developmental or growth lines very clearly. Such information is expected to be of value in explaining the mechanism of decay.

10. Malignant neoplasms are one of the leading causes of death from disease in childhood. In general they are associated with a very grave prognosis, however, recent advances in diagnosis and treatment have resulted in encouraging rates of cure in a number of types of neoplasms observed in this age group. (Pennsylvania M. J., June 1952, J. B. Arey)

11. Detailed physical examinations of over 1,100 workers in uranium mines and mills in Colorado, Utah, New Mexico, and Arizona have revealed no evidences of health damage from radioactivity, according to an interim report to the industry released by the Public Health Service of the Federal Security Agency.

12. The use of carbon tetrachloride is dangerous. Exposure to concentrated fumes for 3 hours is enough to cause serious kidney and/or liver damage. Alcoholic intake prior to and immediately after exposure to carbon tetrachloride enhances the possibility of poisoning. (U. S. Armed Forces M.J, July 1952, F. H. Harris)

13. For the week of 10 July 1952 a total of 621 cases of poliomyelitis was reported in the United States. This represents an increase of only 6 percent over the number (584, corrected figure) for last week. (PHS,FSA)

14. "The Scope of Otolaryngology in Occupational Trauma and Disease" presents briefly the legal background of occupational cases falling within otolaryngology and illustrates the extent and type of cases together with the problems each presented. (A.M.A. Arch. Otolaryng., June 1952, A. Goldner)

15. The use of paraffin as an aid in obliterating the pleural space following total pneumonectomy is discussed in Annals of Surgery, July 1952, W. E. Adams and J. H. Fritz.)

16. The role of research in the modern voluntary teaching hospital is discussed in New England J. Med., 19 June 1952, O. H. Wangensteen.

17. The following Navy dental officers have recently been certified in their specialities by American Boards. American Board of Prosthodontics: CAPT Frank E. Jeffreys (DC) USN, CDR Charles D. Hemphill (DC) USN, and CAPT Jack H. Sault (DC) USN; American Board of Oral Surgery: CDR Raymond F. Huebsch (DC) USN; American Board of Oral Pathology: CDR Robert A. Colby (DC) USN; American Society of Oral Surgeons: CDR Raymond F. Heubsch (DC) USN and CDR Edward A. Gargiulo (DC) USN. (TIO, BuMed)

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Postgraduate Preventive Medical Training in Epidemiology and Industrial Medicine

Medical officers of the Regular Navy, Lieutenant Commander or below, who have had sea or foreign duty and who desire a career in preventive medicine are invited to make immediate application for 1 academic year of postgraduate training beginning in September or early October in an accredited school of Public Health leading to the degree of Master of Public Health and satisfying the academic requirements of the American Board of Preventive Medicine and Public Health. In view of the limited time available for completion of necessary arrangements, application should be made by dispatch to the Bureau of Medicine and Surgery and should make reference to this article.

There is a need for medical officers trained in epidemiology which is the basic discipline of preventive medicine, and which deals with the determination of causes of disease or disability in populations and with the designing and application of preventive or control measures or measures for the promotion of health. Opportunity is afforded at several schools of Public Health to include training in industrial medicine as a minor field of instruction concomitantly with the epidemiology major.

Among the interesting assignments available to young medical officers who successfully complete the course are: (1) epidemic disease control units, ashore and afloat; (2) medical research units; (3) preventive medicine duties on bureau, district, fleet, and type command staffs; (4) special epidemiologic field and laboratory investigations or research; and(5) in various Naval Schools as instructors in such subjects as epidemiology, environmental health, preventive medicine, and related laboratory sciences. For those who minor in industrial medicine, there are numerous opportunities for assignment as industrial medical officers.

The broad knowledge and experience to be gained in a successful career in epidemiology and occupational medicine in the Navy provides outstanding preparation for the administrative responsibilities to be assumed with advancement in rank through the senior grades.

The courses are to be given at the School of Public Health, Harvard University, Boston, Mass.; School of Public Health, Pittsburgh University, Pittsburgh, Pa.; School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md.; and at several other accredited schools of Public Health. (Prof. and Prev. Med. Div., BuMed)

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BUMED CIRCULAR LETTER 52-57 30 June 1952

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Hospitalization and Subsistence rates for fiscal year 1953

Ref: (a) BUMED Cir Ltr 52-8; NDB 31 Jan 1952, 52-43
(b) BUMED Cir Ltr 51-92
(c) ALNAV 51-51
(d) BUMED Cir Ltr 51-26
(e) BUMED Cir Ltr 50-67
(f) ALNAV 118-51; NDB 15 Nov 1951, 51-768
(g) BUSANDA Manual, Par 53225
(h) BUSANDA Manual, Par 41421-1

1. References (a) and (b) are cancelled effective 1 July 1952. Action is being taken to cancel reference (c).

This letter prescribes the hospitalization and subsistence rates for the fiscal year 1953 and sets forth the reporting and collecting procedure to be followed by hospitals, hospital ships, and infirmaries.

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BUMED CIRCULAR LETTER 52-58 30 June 1952

From: Chief, Bureau of Medicine and Surgery
To: All Medical Department Activities and Facilities

Subj: Publication of research reports and other professional papers; expenses in connection with

Ref: (a) BUMED Cir Ltr 50-94 of 29 August 1950
(b) BUMED Cir Ltr 51-122 of 7 September 1951

1. References (a) and (b) are hereby cancelled and superseded as of 1 July 1952.

2. The Bureau will make funds available to management activities for the purpose of defraying the expenses involved in the preparation of original research reports and other professional papers for publication (for example, the making of charts, graphs, illustrations, and additional charges for extra pages) and the purchase of reprints.

3. Permission will be obtained from the Bureau prior to incurring obligations in connection with the publication of research and other professional papers. In requesting approval of obligation of funds for such purposes, a copy of the report or professional paper shall be furnished the Bureau, together with a detailed statement of the services required and the estimated cost of each service, as well as the number and cost of reprints desired. Distribution of reprints is authorized to an accredited distribution list.

4. After Bureau approval has been obtained, each activity under the management or financial control of the Bureau of Medicine and Surgery will negotiate for the printing of the publication locally and the costs incurred will be chargeable to applicable local research or education and training allotment of the activity. Those reports received from activities not under management control of this Bureau, if approved, will be published under contracts negotiated by the National Naval Medical Center, Bethesda, Maryland. No further charges will be lodged directly against Bureau-controlled allotments for the publication of research reports and other professional papers after 1 July 1952.

C. J. BROWN
Acting.

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-59 30 June 1952

From: Chief, Bureau of Medicine and Surgery
To: Naval Hospitals and Hospital Ships

Subj: NAVMED-36, Ration Record

Ref: (a) BUMED Cir Ltr 51-116

1. Instructions set forth in reference (a), for reporting on lines 58 and 59 of subject report, are modified as follows:

a. Line 58.--Delete last sentence and insert "Charges for subsistence only shall be collected at the rate of the hospital ration value in case of officer personnel and reported on a blank line under Section G." No local collection shall be made in case of enlisted personnel.

2. In reference (a), under instructions for Section G, STATUS OF LOCAL COLLECTIONS, Column (7) line 13, change "officers" to read "personnel."

C. J. BROWN
Acting

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-60 30 June 1952

From: Chief, Bureau of Medicine and Surgery
To: Commandants, all Naval Districts and River Commands, CLUSA; all Naval Hospitals, CLUSA; and all Naval and Marine Corps Stations Having Medical Department Personnel Attached, CLUSA

Subj: BUMED Circular Letter 51-91 (Active-duty patients transferred to Veterans Administration hospitals, reporting of), modification of

Ref: (a) BUMED Cir Ltr 51-91
(b) BUMED Cir Ltr 52-38

1. Paragraphs 3e and 4e of reference (a) are hereby cancelled in view of the instructions contained in reference (b). In accordance with reference (b), NAVMED-U reports are no longer required to report treatment or care in Veterans Administration hospitals.

2. This letter shall be considered cancelled after the above cancellations have been noted.

C. J. BROWN
Acting

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-61 30 June 1952

From: Chief, Bureau of Medicine and Surgery
To: Activities Under the Management Control of BUMED

Subj: Maintenance review of ungraded (non-IVb) positions at Medical Department activities

Ref: (a) NCPI 250.7-1m
(b) OIR NOTICE CP 275 of 2 June 1952
(c) CPL&D-45-186 of 28 April 1945

1. Reference (a) requires that a maintenance review program for ungraded positions shall be established in all field activities. Circular Letter 52-61 describes the plan and procedure and directs compliance as soon as possible. The complete review of all ungraded ratings and positions, except Supervisory Mechanical Service jobs, should be completed by 30 June 1953. The Bureau will require addressees to submit a progress report on this program prior to 31 May 1953. Information concerning the exact nature of this report will be furnished prior to 31 May 1953.

The above letter will not be printed in the Navy Department Bulletin.

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BUMED NOTICE CP275 2 July 1952

From: Chief, Bureau of Medicine and Surgery
To: National Naval Medical Center
Naval Hospitals (continental)

Subj: Industrial Relations Institute; schedule for first half of fiscal year 1953

Ref: (a) BUMED Cir Ltr 50-119 dtd 23 October 1950

1. This notice announces the schedule for the Industrial Relations Institute for the first half of fiscal year 1953 and the procedures to be followed.in nominating personnel to attend the Institute

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BUMED NOTICE 1000 10 July 1952

From: Chief, Bureau of Medicine and Surgery
To: Commandants, All Naval Districts, Continental U. S.
Commandant, Potomac River Naval Command
Attn: District Medical Officers

Subj: Listing of Priority Two Reserve medical officers, Addenda #2; forwarding of

Ref: (a) BuMed ltr BUMED:361:rmc P14-2-00 of 29 May 1952

Encl: (1) Addenda #2 to List of Priority Two, USNR medical officers (two copies).

1. This notice is issued to provide additional information for enclosure (1) of reference (a).

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BUMED INSTRUCTION 6250.1 15 July 1952

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Rodenticides

1. BUMED C/L 47-140 is superseded and cancelled. This instruction provides information concerning the toxicity, procurement, and use of warfarin and sodium monofluoroacetate (1080). Information concerning precautions in using the rodenticides is given and also first-aid treatment, and treatment in case of poisoning resulting from these rodenticides.

NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

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